



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/586,488

07/20/2006

Masahiro Kato

8048-1171

4201

466 7590 12/30/2008
YOUNG & THOMPSON
209 Madison Street
Suite 500
ALEXANDRIA, VA 22314

EXAMINER

FISCHER, MARK L

ART UNIT

PAPER NUMBER

2627

MAIL DATE

DELIVERY MODE

12/30/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/586,488	Applicant(s) KATO ET AL.	
	Examiner MARK FISCHER	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claim 8 is objected to because of the following informalities: In lines 2-3, "recording device of recording" should be changed to --recording device for recording--. In line 7, "power,said" should be changed to --power, said--. Appropriate correction is required.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 9 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 9 is drawn to a "program" per se as recited in the preamble and as such is non-statutory subject matter. See MPEP §2106.1V.B.1.a. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g. Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held non-statutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings

Art Unit: 2627

per se, i.e., the descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 8 and 9 recite the limitation "a link power which is the recording power which gives the reproduction quality measured by said measuring device in the second linear velocity" (second to last paragraphs of each of claims 1, 8 and 9) which is confusing because it is unclear whether the limitation is stating that the measuring device is measuring while recording at the second linear velocity, or whether the limitation is stating something else. Also, the limitation "in the second linear velocity" (Claim 1, lines 14-15 and 16-17; Claim 8, lines 16-17 and 18-19; Claim 9, lines 22-23 and 25) is confusing because it is unclear what exactly is "is in the second linear velocity" (i.e. is the recording speed at the second linear velocity? is information being recorded at the second linear velocity? is only the disc rotating at the second linear velocity and no recording being performed?).

Art Unit: 2627

Claim 9 recites the limitation "the information recording apparatus" (lines 3-4) and "said recording device" (line 9). There is insufficient antecedent basis for this limitation in the claim.

Claim 9 claims "a computer program product" but the body of the claim recites only the structure of the recording apparatus. Thus the claim is unclear and confusing what between the computer program product and the recording apparatus is meant to claim.

Additionally, claims 2-7 are rejected for their dependence on independent claim 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

Art Unit: 2627

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (JP Pub. No. 2003-085760) in view of Takeda (US Pat. No. 7,095,691 B2).

Regarding claim 1, Suzuki discloses an information recording apparatus comprising: a recording device for recording record information onto an information recording medium, in which a recording speed can be changed to at least first and second linear velocities and which supports the first and second linear velocities (§ [0007]), by irradiating laser light with a variable recording power (§ [0020]); a measuring device for measuring reproduction quality of the record information by reproducing the record information recorded at the first linear velocity, if the recording speed is changed from the first linear velocity to the second linear velocity (§ [0020]); a first calculating device for calculating a link power, on the basis of correlation information for representing a correlation between the recording power in the second linear velocity and the reproduction quality related to the record information (§ [0020]); and an adjusting device for adjusting the recording power, by a predetermined adjustment amount at a time in stages or in a predetermined change rate in continuity, such that the recording power changes from the link power to a reference power which is the recording power which gives desired target quality as the reproduction quality, if the recording speed is changed from the first linear velocity to the second linear velocity (§ [0029]). Suzuki does not explicitly disclose that a link power is the recording power which gives the reproduction quality measured by the measuring device in the second linear velocity. However, Takeda discloses that when recording strategies are changed,

Art Unit: 2627

calculating a recording power level for the new recording strategy which attains reproduced signal quality equivalent to the reproduced signal quality of the old recording strategy such that the recording strategy can be changed without degrading reproduced signal quality. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Suzuki of changing a recording strategy by changing the recording speed from a first linear velocity to a second linear velocity, with the teachings of Takeda with the motivation to maintain reproduced signal quality when changing recording strategy (i.e. changing linear velocity).

Regarding claim 2, Suzuki discloses that the measuring device measures the reproduction quality by reproducing the record information recorded immediately before the recording speed is changed from the first linear velocity to the second linear velocity (§ [0020]).

Regarding claim 3, Suzuki discloses that the predetermined adjustment amount or the predetermined change rate is variable (§ [0029]).

Regarding claim 4, Suzuki discloses that the adjusting device adjusts the recording power such that the recording power changes to the reference power if a difference between the link power and the reference power is equal to or less than a predetermined amount (§ [0029]).

Regarding claim 5, Suzuki discloses further comprising a second calculating device for preparing the correlation information and for calculating the reference power, by reproducing test information which is the record information recorded for test by the recording device while the recording power is changed (§ [0023]).

Regarding claim 6, Suzuki discloses that the reproduction quality includes at least one of an asymmetry value, a jitter value and a reproduction error rate (§ [0017]).

Art Unit: 2627

Regarding claim 7, Suzuki discloses a controlling device for controlling the recording device to record at least one of the correlation information prepared by the second calculating device and information as for the reference power calculated by the second calculating device, onto the information recording medium (¶ [0028]).

Regarding claim 8, Suzuki discloses an information recording method in an information recording apparatus comprising: a recording device for recording record information onto an information recording medium, in which a recording speed can be changed to at least first and second linear velocities and which supports the first and second linear velocities (¶ [0007]), by irradiating laser light with a variable recording power (¶ [0020]), the information recording method comprising: a measuring process of measuring reproduction quality of the record information by reproducing the record information recorded at the first linear velocity, if the recording speed is changed from the first linear velocity to the second linear velocity (¶ [0020]); a first calculating process of calculating a link power, on the basis of correlation information for representing a correlation between the recording power in the second linear velocity and the reproduction quality related to the record information (¶ [0020]); and an adjusting process of adjusting the recording power, by a predetermined adjustment amount at a time in stages or in a predetermined change rate in continuity, such that the recording power changes from the link power to a reference power which is the recording power which gives desired target quality as the reproduction quality, if the recording speed is changed from the first linear velocity to the second linear velocity (¶ [0029]). Suzuki does not explicitly disclose that a link power is the recording power which gives the reproduction quality measured by the measuring device in the second linear velocity. However, Takeda discloses that when recording strategies are changed,

Art Unit: 2627

calculating a recording power level for the new recording strategy which attains reproduced signal quality equivalent to the reproduced signal quality of the old recording strategy such that the recording strategy can be changed without degrading reproduced signal quality. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Suzuki of changing a recording strategy by changing the recording speed from a first linear velocity to a second linear velocity, with the teachings of Takeda with the motivation to maintain reproduced signal quality when changing recording strategy (i.e. changing linear velocity).

9. Claims 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (JP Pub. No. 2003-085760) in view of Takeda (US Pat. No. 7,095,691 B2) further in view of Nagano (US Pat. No. 7,053,919 B2).

Regarding claim 9, Suzuki discloses an information recording apparatus comprising: a recording device for recording record information onto an information recording medium, in which a recording speed can be changed to at least first and second linear velocities and which supports the first and second linear velocities (§ [0007]), by irradiating laser light with a variable recording power (§ [0020]); a measuring device for measuring reproduction quality of the record information by reproducing the record information recorded at the first linear velocity, if the recording speed is changed from the first linear velocity to the second linear velocity (§ [0020]); a first calculating device for calculating a link power, on the basis of correlation information for representing a correlation between the recording power in the second linear velocity and the reproduction quality related to the record information (§ [0020]); and an adjusting device for

Art Unit: 2627

adjusting the recording power, by a predetermined adjustment amount at a time in stages or in a predetermined change rate in continuity, such that the recording power changes from the link power to a reference power which is the recording power which gives desired target quality as the reproduction quality, if the recording speed is changed from the first linear velocity to the second linear velocity (§ [0029]). Suzuki does not explicitly disclose that a link power is the recording power which gives the reproduction quality measured by the measuring device in the second linear velocity. However, Takeda discloses that when recording strategies are changed, calculating a recording power level for the new recording strategy which attains reproduced signal quality equivalent to the reproduced signal quality of the old recording strategy such that the recording strategy can be changed without degrading reproduced signal quality. Suzuki in view of Takeda does not explicitly disclose a computer program product for tangibly embodying a program of instructions executable by a computer provided in the information recording apparatus, to make the computer function as at least one portion of a first calculating device, a measuring device and an adjusting device. However, Nagano discloses a computer program product (i.e. computer program code) for tangibly embodying a program of instructions executable by a computer (CPU) provided in the information recording apparatus (see Claims 17-19 of Nagano), to make the computer perform a power control operation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Suzuki of changing a recording strategy by changing the recording speed from a first linear velocity to a second linear velocity, with the teachings of Takeda with the motivation to maintain reproduced signal quality when changing recording strategy (i.e. changing linear velocity); and to combine the teachings of Suzuki in view of Takeda with Nagano with the

Art Unit: 2627

motivation to be able to control an information recording apparatus to function to perform the invention of Suzuki in view of Takeda.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Ishii et al. (US Pub. No. 2005/0058033 A1) discloses taking writing quality into account when switching zones.

Tsukada (US Pub. No. 2005/0025019 A1) discloses linking regions by gradually increasing or decreasing recording power.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK FISCHER whose telephone number is (571) 270-3549. The examiner can normally be reached on Monday-Friday from 9:00AM to 6:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2627

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Fischer/

Examiner, Art Unit 2627

12/17/2008

/HOA T NGUYEN/

Supervisory Patent Examiner, Art Unit 2627